

Application Serial No. 10/573,975
Submission with RCE filed September 14, 2009
Further reply to final Office Action mailed April 17, 2009

REMARKS

Claims 15-28 are pending in this application. Claims 15-18 and 20-28 are amended herein. Support for the amendments may be found at paragraphs [0018] and [0073] of the specification. Further reconsideration is requested based on the foregoing amendment and the following remarks.

Response to Arguments:

The Applicants appreciate the consideration given to their arguments. The Applicants, however, were disappointed to find that their arguments were not found to be persuasive. The Continuation Sheet attached to the Advisory Action mailed July 2, 2009 asserts:

The base station measurements referred to in Paragraph 59, 61 and their related figures are examples of another manner of taking measurements in another embodiment of the same invention of Kurihara, and these are not referred to in support of stating that Kurihara makes up for the deficiency of Bergendorff.

This is submitted to be incorrect. Neither Fig. 7, to which paragraph [0059] refers, nor Fig. 8, to which paragraph [0060] refers, are described as showing alternative embodiments, contrary to the assertion in the Advisory Action. Fig. 7, rather, shows a base station measuring the distance to other terminals, not "inferring a distance between the first mobile radio communication device and the at least one second mobile communication device on the basis of the signal propagation time of the at least one radio signal," as recited formerly in claim 15. In particular, as described at paragraph [0076]:

FIG. 7 shows various ranges used when a base station measures the distance therefrom to each of other terminals. In this case, there are one wireless base station, two wireless terminals, and two objects. These objects can physically reflect ranging-signal radio waves sent from the base station.

Fig. 8, for its part, shows measuring the distance between the base station and each of the other terminals in *this* embodiment, not any other embodiment, let alone "inferring a distance between the first mobile radio communication device and the at least one second mobile communication device on the basis of the signal propagation time of the at least one radio signal," as recited formerly in claim 15. In particular, as described at paragraph [0080]:

FIG. 8 illustrates an entire sequence of measuring the distance between the base station and each of the other terminals in this embodiment.

Since, in Kurihara, the base station measures a distance therefrom to each of other wireless units, Kurihara is not "inferring a distance between the first mobile radio communication

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device and the at least one second mobile communication device on the basis of the signal propagation time of the at least one radio signal," "where the at least one radio signal" is "from at least one second mobile communication device."

Nevertheless, in the interest of compact prosecution only, and not for any reason of patentability, claim 15, for example, has some been amended further to recite:

A method of determining a local position of a first mobile radio communication terminal device in a radio cell of a radio network of a radio communication system, wherein the radio cell is fixed by a base station, the method comprising: transmitting position information by at least one radio signal from at least one second mobile communication terminal device, the location of which is known either to the at least one second mobile communication terminal device or to the radio network, and which is either in the radio cell or in another radio cell, the at least one radio signal being transmitted to the first mobile radio terminal device via either a direct radio connection or an indirect radio connection via the radio network; inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal.

Further reconsideration is requested.

Claim Rejections - 35 U.S.C. § 103:

Claims 15, 16, 19, 20, and 22-28 were rejected under 35 U.S.C. § 103(a) as unpatentable over WIPO Publication No. WO 02/078382 to Bergendorff (hereinafter "Bergendorff") in view of US Patent Application Publication No. 2005/0099942 to Kurihara (hereinafter "Kurihara"). The rejection is traversed. Reconsideration is earnestly solicited.

The preamble of claim 15 recites:

A method of determining a local position of a first mobile radio communication terminal device in a radio cell of a radio network of a radio communication system, wherein the radio cell is fixed by a base station, the method.

Neither Bergendorff nor Kurihara teaches, discloses, or suggests "determining a local position of a first mobile radio communication terminal device in a radio cell of a radio network of a radio communication system, wherein the radio cell is fixed by a base station, the method," as recited in claim 15. Kurihara, in fact, describes an ad hoc network without base stations. But naturally, such an ad hoc network does not disclose "determining a local position of a first mobile radio communication terminal device in a radio cell of a radio network of a radio communication system, wherein the radio cell is fixed by a base station, the method," as recited in claim 15

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since, according to Kurihara at paragraph [0069], the ad hoc network does not include a base station at all.

The second and third clauses of claim 15 recite:

Transmitting position information by at least one radio signal from at least one second mobile communication terminal device, the location of which is known either to the at least one second mobile communication terminal device or to the radio network, and which is either in the radio cell or in another radio cell, the at least one radio signal being transmitted to the first mobile radio terminal device via either a direct radio connection or an indirect radio connection via the radio network.

And:

Inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal.

The final Office Action acknowledges graciously in section 5, at page 3, that:

Bergendorff does not teach inferring a distance between the first mobile radio communication device and the at least one second mobile communication device on the basis of the signal propagation time of the at least one radio signal.

The final Office Action seeks to compensate for this deficiency of Bergendorff with respect to claim 15 by combining Bergendorff with Kurihara, asserting further in section 5, at the bottom of page 3, continuing at the top of page 4, that:

Kurihara teaches inferring a distance between the first mobile radio communication device and the at least one second mobile communication device on the basis of the signal propagation time of the at least one radio signal (**A distance between a first and second wireless unit is obtained from a signal propagation time between said first and second wireless unit, Paragraph 29.**)

This is submitted to be incorrect. Most of the embodiments described in Kurihara refer to a WLAN-system, in which a determination of a location of a wireless communication unit is performed by measuring the distance between the wireless communication unit and one or more base stations. This is to be contrasted with claim 15, which recites "inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal," and in which "the at least one radio signal" is "from at least one second mobile communication terminal device."

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Kurihara even teaches away from the subject matter of claim 15, since Kurihara suggests that direct determination of the distance between two wireless communication units is only performed if a base station is not part of the network at all, since in all of the embodiments in which a base station is part of the network, the determination of the position of the first wireless communication unit is done by measuring the distance between the first wireless communication unit and one of a plurality of base stations. Therefore, Kurihara describes determining the position of wireless communication unit in the cellular network by measuring the distance between the wireless communication unit and one or more base stations, not by "inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal," and in which "the at least one radio signal" is "from at least one second mobile communication terminal device," as recited in claim 15.

In Kurihara, moreover, the *base* station measures a distance therefrom to each of other wireless units. In particular, as described at paragraph [0059]:

FIG. 7 is a view illustrating various ranges used when a base station (that is, a ranging-signal transmitting wireless unit) measures a distance therefrom to each of other wireless units.

Since, in Kurihara, the base station measures a distance therefrom to each of other wireless units, Kurihara is not "inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal," where "the at least one radio signal" is "from at least one second mobile communication terminal device," as recited in claim 15.

In Kurihara, moreover, an application program is switched according to the relative distance between the terminal and each of the plurality of *base* stations. In particular, as described at paragraph [0061]:

FIG. 9 is a view illustrating a manner in which the interconnection relation between a terminal and each of a plurality of base stations is communicated and the processing to be performed by executing an application program is switched according to the relative distance between the terminal and each of the plurality of base stations.

Since, in Kurihara, an application program is switched according to the relative distance between the terminal and each of the plurality of base stations, Kurihara is not "inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least

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one radio signal," where "the at least one radio signal" is "from at least one second mobile communication terminal device," as recited in claim 15.

Kurihara, moreover, is measuring the pseudoranges thereof from three or more *base* stations. In particular, as described at paragraph [0062]:

FIG. 10 is a view illustrating a manner in which the two-dimensional position of a terminal is determined by measuring the pseudoranges thereof from three or more base stations in a case that the two-dimensional coordinates of each of the base stations are known.

Since Kurihara is measuring the pseudoranges thereof from three or more base stations, Kurihara is not "inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal," where "the at least one radio signal" is "from at least one second mobile communication terminal device," as recited in claim 15.

In Kurihara, moreover, a *base* station measures the distance therefrom to each of other terminals. In particular, as described at paragraph [0076]:

FIG. 7 shows various ranges used when a base station measures the distance therefrom to each of other terminals. In this case, there are one wireless base station, two wireless terminals, and two objects. These objects can physically reflect ranging-signal radio waves sent from the base station.

Since, in Kurihara, a base station measures the distance therefrom to each of other terminals, Kurihara is not "inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal," where "the at least one radio signal" is "from at least one second mobile communication terminal device," as recited in claim 15.

In Kurihara, moreover, the first wireless unit, which is a *base* station as described at paragraph [0059], measures a distance between the first wireless unit and the second wireless unit according to a propagation time between the first wireless unit and the second wireless unit. In particular, as described at paragraph [0029]:

In this system, the first wireless unit measures a distance between the first wireless unit and the second wireless unit according to a propagation time between the first wireless unit and the second wireless unit.

Since, in Kurihara, the first wireless unit measures a distance between the first wireless unit and the second wireless unit according to a propagation time between the first wireless unit and the second wireless unit, Kurihara is not "inferring a distance between the first mobile radio

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communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal," where "the at least one radio signal" is "from at least one second mobile communication terminal device," as recited in claim 15.

In Kurihara, moreover, the propagation time is obtained from an elapsed time since the first wireless unit, which is a *base station* as described at paragraph [0059], transmits the ranging signal. In particular, as described further at paragraph [0029]:

The propagation time is obtained from an elapsed time since the first wireless unit transmits the ranging signal.

Since, in Kurihara, the propagation time is obtained from an elapsed time since the first wireless unit transmits the ranging signal, Kurihara is not "inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal," where "the at least one radio signal" is "from at least one second mobile communication terminal device," as recited in claim 15.

Kurihara, finally, teaches away from claim 15 by describing the classical distance measuring between the base station and a terminal, wherein the signal for measuring the distance comes from the base station, as it is measured in the case of a conventional RTT method, for example. In particular, as described at paragraph [0079]:

A one-way wave propagation time of the wave propagating from the base station to the terminal is defined as a propagation time X. A value obtained by multiplying this value X by the velocity of light is calculated as an absolute distance between the base station and the terminal.

Furthermore, as can be seen from Figs. 7, 9, and 10 of Kurihara, the local area networks are star-shaped, and a direct communication between mobile devices, without measuring the distance between the terminal and the base station, is not provided. The invention of claim 15, on the other hand, provides a more flexible and more exact localization of the mobile communication devices than the combination of Bergendorff and Kurihara proposed in the final Office Action. Claim 15 is submitted to be allowable. Withdrawal of the rejection of claim 15 is earnestly solicited.

Claims 16, 19, 20, and 22-26 depend from claim 15 and add further distinguishing elements. Claims 16, 19, 20, and 22-26 are thus also submitted to be allowable. Withdrawal of the rejection of claims 16, 19, 20, and 22-26 is also earnestly solicited.

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Claims 27 and 28:

The fifth clause of claim 27 recites:

Wherein a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device is inferred on the basis of the signal propagation time of the at least one radio signal.

Bergendorff neither teaches, discloses, nor suggests "wherein a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device is inferred on the basis of the signal propagation time of the at least one radio signal," as discussed above with respect to the rejection of claim 15. Claim 27 is thus also submitted to be allowable, for at least those reasons discussed above with respect to the rejection of claim 15. Withdrawal of the rejection of claim 27 is earnestly solicited.

Claim 28 depends from claim 27 and adds further distinguishing elements. Claim 28 is thus also submitted to be allowable. Withdrawal of the rejection of claim 28 is earnestly solicited.

Claims 17, 18, and 21:

Claims 17, 18, and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bergendorff and Kurihara in view of U.S. Patent No. 6,836,653 to Kang (hereinafter "Kang"). The rejection is traversed. Reconsideration is earnestly solicited.

Claims 17, 18, and 21 depend from claim 15 and add further distinguishing elements. Neither Bergendorff nor Kurihara teaches, discloses, or suggests "inferring a distance between the first mobile radio communication terminal device and the at least one second mobile communication terminal device on the basis of the signal propagation time of the at least one radio signal," where "the at least one radio signal" is "from at least one second mobile communication terminal device," as discussed above with respect to the rejection of claim 15. Kang does not either, and thus cannot make up for the deficiencies of either Bergendorff or Kurihara with respect to claims 17, 18, and 21 in any case. King, rather, merely describes a method for applying differing charging rates on the basis of location information. Thus, even if Bergendorff, Kurihara, and Kang were combined as proposed in the final Office Action, claims 17, 18, and 21 would not result. Claims 17, 18, and 21 are thus also submitted to be allowable. Withdrawal of the rejection of claims 17, 18, and 21 is earnestly solicited.

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Conclusion:

Accordingly, in view of the reasons given above, it is submitted that all of claims 15-28 are allowable over the cited references. Allowance of all claims 15-28 and of this entire application is therefore respectfully requested.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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